

# Radial Leaded Aluminum Conductive Polymer Electrolytic Capacitors

## RPA Series



### FEATURES

- Super Low ESR, High ripple current capability
- Endurance: 105°C, 5000 hours
- RoHS and Halogen Free Compliance

### APPLICATIONS

- Servers, APC/UPS power supply, power inverter, etc.

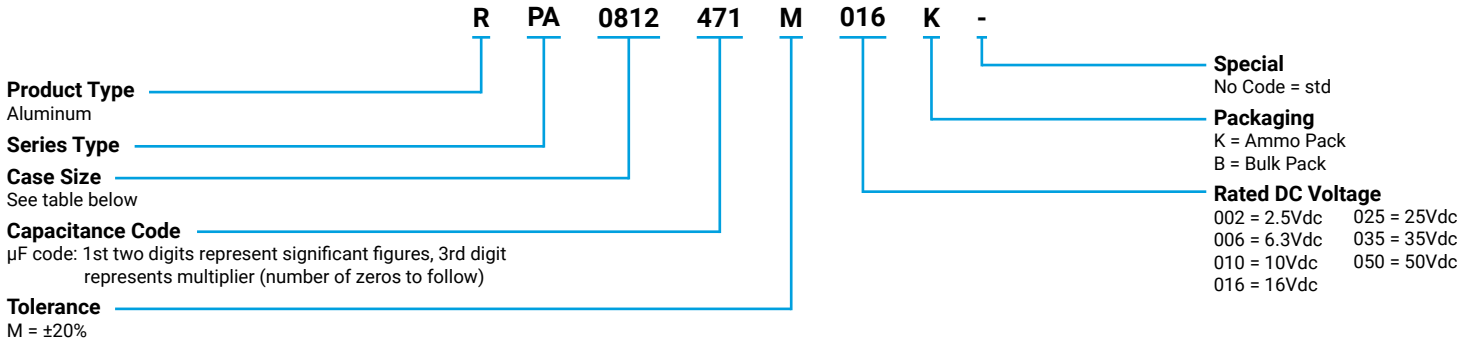


LEAD-FREE  
LEAD-FREE COMPATIBLE  
COMPONENT



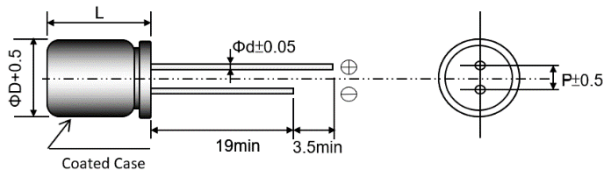
RoHS  
COMPLIANT

### HOW TO ORDER



### CASE DIMENSIONS millimeters (inches)

Code	D $\pm 0.50$ (0.020)	L $\pm 1.50$ (0.060)	d $\pm 0.05$ (0.002)	P $\pm 0.50$ (0.020)	Typical Weight (g)
0606	6.30 (0.248)	6.00 (0.236)	0.45 (0.018)	2.50 (0.098)	0.25
0608	6.30 (0.248)	8.00 (0.315)	0.50 (0.020)	2.50 (0.098)	0.43
0609	6.30 (0.248)	9.00 (0.354)	0.50 (0.020)	2.50 (0.098)	0.45
0808	8.00 (0.315)	8.00 (0.315)	0.60 (0.024)	3.50 (0.138)	0.66
0812	8.00 (0.315)	12.00 (0.472)	0.60 (0.024)	3.50 (0.138)	0.85
1010	10.00 (0.394)	10.00 (0.394)	0.60 (0.024)	5.00 (0.197)	1.10
1012	10.00 (0.394)	12.00 (0.472)	0.60 (0.024)	5.00 (0.197)	1.25

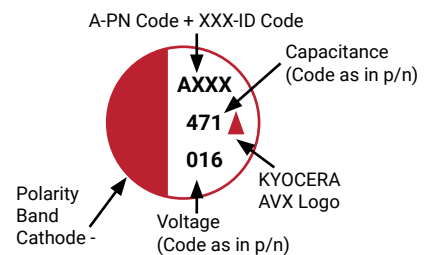


### TECHNICAL SPECIFICATIONS

<b>Category Temperature Range:</b>	-55°C to +105°C	
<b>Capacitance Range</b>	At 25°C, 120Hz	10 $\mu\text{F}$ to 2200 $\mu\text{F}$
<b>Capacitance Tolerance:</b>	At 25°C, 120Hz	$\pm 20\%$
<b>Dissipation Factor (%)</b>	Measurement Frequency: 120Hz at 25°C	Please see the ratings and part number reference table below
<b>Leakage Current:</b>	After 2 minutes at rated working voltage at 25°C*	$I \leq 0.2\text{CV}$ or 300 $\mu\text{A}$ , whichever is greater

\* Note: In the case of an anomalous reading, re-measure the leakage current after following voltage treatment: Voltage treatment: DC rated voltage to be applied to the capacitors for 120 minutes at 105°C.

### MARKING



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.kyocera-avx.com/disclaimer/](http://www.kyocera-avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

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### CAPACITANCE AND RATED VOLTAGE RANGE (FIGURES DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V <sub>R</sub> )						
µF	Code	2.5V	6.3V	10V	16V	25V	35V	50V
10	100							0606
22	220						0606	
33	330							0608
47	470					0606		0808
68	680						0608	0812
82	820				0606			
100	101		0606		0608	0609		1010, 1012
120	121			0606			0808	
150	151						0812	
180	181		0606			0808		
220	221	0606			0608	0812	1010	
270	271						1012	
330	331			0608	0808	1010		
470	471		0608		0812, 1012	1012		
560	561	0608	0608, 0808	0808				
680	681		0808	0812	1010			
820	821				1012			
1000	102	0808	0812	1010	1012			
1200	122	0812	1010	1012				
1800	182	1012	1012					
2200	222	1012						

Released ratings

### RATINGS & PART NUMBER REFERENCE

Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL Max. (µA)	DF Max. (%)	ESR Max. @100kHz (mΩ)	100kHz RMS Current (mA)
<b>2.5 V</b>							
RPA0606221M002*	0606	220	2.5	300	12	24	2400
RPA0608561M002*	0608	560	2.5	300	12	15	3200
RPA0808102M002*	0808	1000	2.5	500	12	15	3640
RPA0812122M002*	0812	1200	2.5	600	12	10	5200
RPA1012182M002*	1012	1800	2.5	900	12	10	5200
RPA1012222M002*	1012	2200	2.5	1100	12	10	5500
<b>6.3 Volt</b>							
RPA0606101M006*	0606	100	6.3	300	12	24	2400
RPA0606181M006*	0606	180	6.3	300	12	24	2400
RPA0608471M006*	0608	470	6.3	592	12	15	3500
RPA0608561M006*	0608	560	6.3	706	12	15	3500
RPA0808561M006*	0808	560	6.3	706	12	15	4100
RPA0808681M006*	0808	680	6.3	856	12	15	4300
RPA0812102M006*	0812	1000	6.3	1260	12	12	5000
RPA1010122M006*	1010	1200	6.3	1512	12	15	5200
RPA1012182M006*	1012	1800	6.3	2268	12	12	5500
<b>10 Volt</b>							
RPA0606121M010*	0606	120	10	300	12	24	2400
RPA0608331M010*	0608	330	10	660	12	15	3500
RPA0808561M010*	0808	560	10	1120	12	15	4000
RPA0812681M010*	0812	680	10	1360	12	15	4800
RPA1010102M010*	1010	1000	10	2000	12	15	4800
RPA1012122M010*	1012	1200	10	2400	12	12	5500
<b>16V</b>							
RPA0606820M016*	0606	82	16	300	12	24	2400
RPA0608101M016*	0608	100	16	320	12	15	3500
RPA0608221M016*	0608	220	16	704	12	15	3500
RPA0808331M016*	0808	330	16	1056	12	15	4200
RPA0812471M016*	0812	470	16	1504	12	12	4500
RPA1012471M016*	1012	470	16	1504	12	10	5100

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### RATINGS & PART NUMBER REFERENCE

Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL Max. (μA)	DF Max. (%)	ESR Max. @100kHz (mΩ)	100kHz RMS Current (mA)
RPA1010681M016*	1010	680	16	2176	12	15	5100
RPA1012821M016*	1012	820	16	2624	12	15	5400
RPA1012102M016*	1012	1000	16	3200	12	15	5400
<b>25 Volt</b>							
RPA0606470M025*	0606	47	25	300	12	40	1500
RPA0609101M025*	0609	100	25	500	12	30	2500
RPA0808181M025*	0808	180	25	900	12	30	3260
RPA0812221M025*	0812	220	25	1100	12	30	3520
RPA1010331M025*	1010	330	25	1650	12	20	3850
RPA1012471M025*	1012	470	25	2350	12	25	4020
<b>35 Volt</b>							
RPA0606220M035*	0606	22	35	300	12	70	1450
RPA0608680M035*	0608	68	35	476	12	60	1520
RPA0808121M035*	0808	120	35	840	12	30	2100
RPA0812151M035*	0812	150	35	1050	12	26	2800
RPA1010221M035*	1010	220	35	1540	12	30	3050
RPA1012271M035*	1012	270	35	1890	12	26	3650
<b>50 Volt</b>							
RPA0606100M050*	0606	10	50	300	12	90	900
RPA0608330M050*	0608	33	50	330	12	60	1500
RPA0808470M050*	0808	47	50	470	12	32	2000
RPA0812680M050*	0812	68	50	680	12	28	2200
RPA1010101M050*	1010	100	50	1000	12	32	2350
RPA1012101M050*	1012	100	50	1000	12	28	2550

\* Used to denote packing type: "K" for Ammo Pack or "B" for Bulk.

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2 volts. DCL is measured at rated voltage after 2 minutes

### FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

Frequency	120 ≤ F(Hz) <1k	1k ≤ F(Hz) <10k	10k ≤ F(Hz) <100k	100k ≤ F < 500kHz
Coefficient	0.05	0.30	0.70	1.00

### QUALIFICATION TABLE

Test	RPA Series (Temperature Range -55°C to +105°C)		
	Condition	Characteristics	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 5000 hours at 105°C.	Visual examination	no visible damage
		ΔC/C	≤ ±20% of the initial limit
		DF:	≤ 150% of the initial specified limit
		ESR:	≤ 150% of the initial specified limit
		DCL:	≤ Initial specified limit
Damp Heat (Steady State)	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to store at 60°C, 90 to 95% RH for 1000 hours, without DC applied.	Visual examination	no visible damage
		ΔC/C	≤ ±20% of the initial limit
		DF:	≤ 150% of the initial specified limit
		ESR:	≤ 150% of the initial specified limit
		DCL:	≤ Initial specified limit
Surge Voltage	The capacitors shall be subjected to 1000 cycles each consisting of charge with the surge voltages specified at 105°C for 30 seconds through a protective resistor (R = 1 kΩ) and discharge for 5 minutes 30 seconds.	Visual examination	no visible damage
		ΔC/C	≤ ±20% of the initial limit
		DF:	≤ 150% of the initial specified limit
		ESR:	≤ 150% of the initial specified limit
		DCL:	≤ Initial specified limit

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### STORAGE

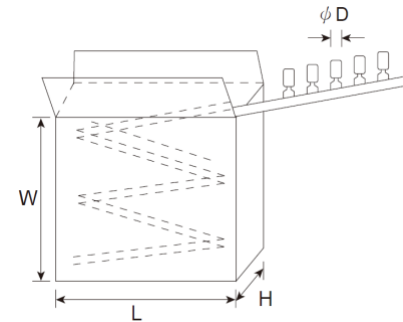
1. It is recommended to keep capacitors between the ambient temperatures of 5°C to 35°C and a relative humidity of 75% or below.
2. Confirm that the environment does not have any of the following conditions:
  - Damp conditions such as water, saltwater spray, or oil spray or fumes. High humidity or humidity condensation situations.
  - In an atmosphere filled with toxic gasses (such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonia, etc.).
  - Being exposed to direct sunlight, ozone, ultraviolet ray, or radiation.
  - Being exposed to acidic or alkaline solutions.
  - Under severe conditions where vibration and / or mechanical shock exceed the applicable ranges of the specification.
- 3.

Category	Description	Storage Life
Mid-High Voltage	160V and above	2yrs, after 1yr, needs to check characteristics, if NG, needs to do aging
Low Voltage	120V and below	2yrs

### PACKAGE TAPE DIMENSIONS units (mm)

### AMMO PACKING

Ammo Pack						
Size Code	W±5	L±5	H±5	Qty. (pcs)	G.W. kg/box	Box /Carton
0606-0609	235	327	54	1500	1.12	10
0808-0812	265	327	51	1000	1.48	10
1010-1012	235	330	57	600	1.29	10



### BULK PACKING

Package Box				
Size Code	Bags Inner box	Layer Quantity	Quantity (pcs/bag)	Total quantity (pcs/carton)
0606	10	2	1000	20,000
0608-0609	9	2	1000	18,000
0808-0812	10	2	500	10,000
1010-1012	11	2	200	4400